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Relevance scale ☐ ☐ ☐ ☐ ☐**1** [Partitioning digital worlds: focal and peripheral awareness in multiple monitor use](#)


Jonathan Grudin

March 2001 **Proceedings of the SIGCHI conference on Human factors in computing systems**Full text available:  [pdf\(216.65 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Software today does not help us partition our digital worlds effectively. We must organize them ourselves. This field study of users of multiple monitors examines how people with a lot of display space arrange information. Second monitors are generally used for secondary activities related to principal tasks, for peripheral awareness of information that is not the main focus, and for easy access to resources. A second monitor improves efficiency in ways that are difficult to measure yet can ...

**Keywords:** awareness, displays, multiple monitors**2** [Improving interaction: Display space usage and window management operation comparisons between single monitor and multiple monitor users](#)

Dugald Ralph Hutchings, Greg Smith, Brian Meyers, Mary Czerwinski, George Robertson

May 2004 **Proceedings of the working conference on Advanced visual interfaces**Full text available:  [pdf\(91.48 KB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The continuing trend toward greater processing power, larger storage, and in particular increased display surface by using multiple monitor supports increased multi-tasking by the computer user. The concomitant increase in desktop complexity has the potential to push the overhead of window management to frustrating and counterproductive new levels. It is difficult to adequately design for multiple monitor systems without understanding how multiple monitor users differ from, or are similar to, si ...

**Keywords:** UI logs, automation, multiple monitors, space management, user interaction, window management**3** [Hardware-accelerated real-time simulation of arbitrary visual fields](#)

Andrew T. Duchowski

March 2004 **Proceedings of the Eye tracking research & applications symposium on Eye tracking research & applications**Full text available:  [pdf\(501.57 KB\)](#)Additional Information: [full citation](#), [abstract](#), [index terms](#)

Recent advancements in computer graphics hardware have made it possible to develop hardware-accelerated real-time imaging displays. This poster presents technical details of

an OpenGL multitexturing approach for real-time simulation of arbitrary visual fields over a still image. Mipmapping facilitates in-hardware dyadic (power-of-two) degradation of the image to serve as the low-resolution periphery. Multitexture compositing provides a mechanism to combine the image's high-resolution pixels with ...

4 GLUMM: an application programming interface for multi-screen programming in a windows environment

Daniel C. Cliburn

April 2003 **The Journal of Computing in Small Colleges**, Volume 18 Issue 4

Full text available:  pdf(134.49 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The state of the art in Virtual Reality (VR) and Immersive Visualization software today often requires multiple screens or display devices. This additional screen space can offer many views into the same scene or provide an abundance of screen space for maximum display of information. There are many APIs in existence for development of software that can take advantage of multiple screens, however, few support development in a Windows environment (most are for some variant of the UNIX operating s ...

5 Putting OO distributed programming to work

Pascal Felber, Rachid Guerraoui, Mohamed E. Fayad

November 1999 **Communications of the ACM**, Volume 42 Issue 11

Full text available:  pdf(117.85 KB)  html(26.58 KB) Additional Information: [full citation](#), [index terms](#)

6 Late breaking result papers: Automatic support for web user studies with SCONE and TEA

Hartmut Obendorf, Harald Weinreich, Torsten Hass

April 2004 **Extended abstracts of the 2004 conference on Human factors and computing systems**

Full text available:  pdf(286.38 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper describes the concepts of TEA, a flexible tool that supports user tests by automating repetitive tasks and collecting data of user inputs and actions. TEA was specifically designed for user studies in the World Wide Web and is able to interact with a web browser. Building on a web intermediary (WBI) and a framework for web enhancement tools (SCONE), TEA can be applied in a range of test settings - providing either a controlled laboratory environment or a quick tool for collecting info ...

**Keywords:** WWW, test automation, usability testing methods

7 Designing better visual interfaces: Shrinking window operations for expanding display space

Dugald Ralph Hutchings, John Stasko

May 2004 **Proceedings of the working conference on Advanced visual interfaces**

Full text available:  pdf(146.49 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Recent research and technology advances indicate that multiple monitor systems are likely to become commonplace in the near future. An important property of such systems is that the physical separation of the display prompts users to place windows entirely within monitors, and thus does not fully alleviate the problem of managing windows on smaller monitors. Another finding about multiple monitor systems is that an additional monitor often holds windows that help the user maintain awareness rath ...

**Keywords:** multiple monitors, relevant regions, window operations

8 Advancing interaction: DeepDocument: use of a multi-layered display to provide context awareness in text editing

Masood Masoodian, Sam McKoy, Bill Rogers, David Ware

May 2004 **Proceedings of the working conference on Advanced visual interfaces**

Full text available:  pdf(329.78 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Word Processing software usually only displays paragraphs of text immediately adjacent to the cursor position. Generally this is appropriate, for example when composing a single paragraph. However, when reviewing or working on the layout of a document it is necessary to establish awareness of current text in the context of the document as a whole. This can be done by scrolling or zooming, but when doing so, focus is easily lost and hard to regain. We have developed a system called DeepDocument us ...

**Keywords:** Deep Video™, Microsoft Word™, context awareness, multi-layered display, text editing, word processing

9 Improving interaction: Scalable Fabric: flexible task management

George Robertson, Eric Horvitz, Mary Czerwinski, Patrick Baudisch, Dugald Hutchings, Brian Meyers, Daniel Robbins, Greg Smith

May 2004 **Proceedings of the working conference on Advanced visual interfaces**

Full text available:  pdf(138.89 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Our studies have shown that as displays become larger, users leave more windows open for easy multitasking. A larger number of windows, however, may increase the time that users spend arranging and switching between tasks. We present *Scalable Fabric*, a task management system designed to address problems with the proliferation of open windows on the PC desktop. Scalable Fabric couples window management with a flexible visual representation to provide a focus-plus-context solution to deskto ...

**Keywords:** interaction, scaling, spatial memory, task management

10 Revisiting display space management: understanding current practice to inform next-generation design

Dugald Ralph Hutchings, John Stasko

May 2004 **Proceedings of the 2004 conference on Graphics interface**

Full text available:  pdf(219.97 KB) Additional Information: [full citation](#), [abstract](#), [references](#)


Most modern computer systems allow the user to control the space allocated to interfaces through a window system. While much of the understanding of how people interact with windows may be regarded as well-known, there are very few reports of documented window management practices. Recent work on larger display spaces indicates that multiple monitor use is becoming more commonplace, and that users are experiencing a variety of usability issues with their window systems. The lack of understanding ...

**Keywords:** display space management, interview, multiple monitors, window management

11 New products

Linux Journal Staff

July 2004 **Linux Journal**, Volume 2004 Issue 123

Full text available:  html(7.27 KB) Additional Information: [full citation](#)

12 Interesting program representations: 3D representations for software visualization

Andrian Marcus, Louis Feng, Jonathan I. Maletic

June 2003 **Proceedings of the 2003 ACM symposium on Software visualization**

Full text available:  pdf(3.06 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


The paper presents a new 3D representation for visualizing large software systems. The origins of this representation can be directly traced to the SeeSoft metaphor. This work extends these visualization mechanisms by utilizing the third dimension, texture, abstraction mechanism, and by supporting new manipulation techniques and user interfaces. By utilizing a 3D representation we can better represent higher dimensional data than previous 2D views. An overview of our prototype tool and its basic ...

**Keywords:** 3D visualization, SeeSoft, file maps, software visualization

13 The notification collage: posting information to public and personal displays

Saul Greenberg, Michael Rounding

March 2001 **Proceedings of the SIGCHI conference on Human factors in computing systems**

Full text available:  pdf(3.02 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


The Notification Collage (NC) is a groupware system where distributed and co-located colleagues comprising a small community post media elements onto a real-time collaborative surface that all members can see. Akin to collages of information found on public bulletin boards, NC randomly places incoming elements onto this surface. People can post assorted media: live video from desktop cameras; editable sticky notes; activity indicator; slide shows displaying a series of digital photos, snaps ...

**Keywords:** awareness, informal interaction, media spaces, messaging

14 Graphic time-sharing with real-time data bases

Jesse B. Hillman

August 1969 **Proceedings of the 1969 24th national conference**

Full text available:  pdf(770.17 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

This system is being developed to process flight test data for the McDonnell-Douglas Corporation to significantly reduce flight test development and certification time and to reduce data processing costs. It is a time-sharing system using graphic cathode ray tube terminals. The system consists of nine processors: a Sigma 7 central processing unit, three general-purpose input/output processors, two special telemetry decommutator channels and three Sigma 2 central processor units. < ...

15 GFX: Linux graphics drivers

Robin Rowe

April 2002 **Linux Journal**, Volume 2002 Issue 96

Full text available:  html(17.10 KB) Additional Information: [full citation](#), [index terms](#)

16 Technical Session: Helping faculty make technology a part of the curriculum

Brian Gardner, Neil Clarke

October 2001 **Proceedings of the 29th annual ACM SIGUCCS conference on User services**

Full text available:  pdf(184.04 KB) Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

Drew University had a problem. Despite an early lead in ubiquitous computing, the use of technology in the curriculum had been sidetracked by the technology itself. Faculty were interested, but it wasn't clear where to turn to for support and advice. Small pilot projects were planted to seed larger grant applications. This led to a continuing program that gives faculty a single point of contact and many opportunities to get the experience and exposure they need to improve education through the a ...

**Keywords:** curriculum, faculty development, faculty lab, retention, summer workshops, training, ubiquitous computing

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10	198	(dual near3 monitor ) and (lcd second another small) near5 monitor	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/31 12:26
12	3	((dual near3 monitor ) and display\$4 same (content ad banner advertis\$5) same (lcd second another small) near5 monitor ) and display\$4 with (content data information) with (main first crt ) with monitor	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/31 12:24
11	9	(dual near3 monitor ) and display\$4 same (content ad banner advertis\$5) same (lcd second another small) near5 monitor	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/31 12:24
13	37	(dual near3 monitor ) and ( second another small) near5 monitor and (main first) with monitor same (coupl\$4 atached integrat\$4 integral\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/31 12:27

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